Mount Vernon Memorial Highway: Little Hunting Creek Bridge
Carries the Mount Vernon Memorial Highway over Little
Hunting Creek along the Potomac, 8.6 miles south of I-95
Mount Vernon Vicinity
Fairfax County
Virginia

HAER No. VA-42D

HAER
VA,
30-____,
6-D-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HAER VA, 30-____, 6-D-

HISTORIC AMERICAN ENGINEERING RECORD

MOUNT VERNON MEMORIAL HIGHWAY:
LITTLE HUNTING CREEK BRIDGE

HAER No. VA-42D

Location: Carrying the Mount Vernon Memorial Highway across Little Hunting Creek at the Potomac, 8.6 miles south of I-95 and 1.1 miles north of Mount Vernon in Fairfax County, Virginia.

UTM: 18/319650/4286750
Quad.: Mount Vernon

Date of Construction: Designed 1929, Completed 1932

Architect: Gilmore D. Clarke

Engineer: E.J. Budge, Resident Engineer
F.M. DeWaters, Assistant Resident Engineer
J.V. McNary, Senior Engineer,
U.S. Bureau of Public Roads

Contractor: Merritt-Chapman & Scott Corporation, New York, New York

Present Owner: George Washington Memorial Parkway
National Park Service
Department of the Interior

Present Use: Vehicular bridge

Significance: This parkway bridge is significant because it typifies the style of bridges which were designed for this new type of roadway. This bridge was designed to harmonize with the landscape by incorporating the natural shape of the arch, facing the bridge with native stone, and using careful attention regarding the plantings and landscape surrounding the bridge.

Historian: Elizabeth M. Nolin, 1988

The final bridge on the Mount Vernon Memorial Highway (see HAER No. VA-42) to be crossed prior to reaching Mount Vernon is the bridge over Little Hunting Creek. It is a single arch bridge constructed of reinforced concrete with a native stone facing. The arch of the bridge has a clear span of fifty-two feet with the overall length measuring 144.5 feet. The two categories of stone used in facing the bridge were classified as stone masonry and dimensioned masonry. The stone masonry ranges in color from pink to light gray-blue to dark green, and is a granite or mica schist. The dimensioned masonry is light gray granite and is used in the arch ring, quoins of the battered abutments, in a line of masonry just above the arch ring, and as the cap stones.[1] Roadway width of the bridge measures sixty-six feet with a total width of the bridge measuring seventy-two feet.[2]

The bridge over Little Hunting Creek was not included in the original Unit III construction documents. To cut costs on the parkway, thereby eliminating the construction of some bridges, several of the smaller streams which drained into the Potomac were filled in with soil. This was successful in all cases excluding the Little Hunting Creek. The soil in the creek bed was extremely unstable, and the addition of fill did not stabilize the bed.[3] Prior to the construction of the Little Hunting Creek Bridge a major portion of the unstable soil was excavated by the contractor at his own expense.[4] As with the Boundary Channel Bridge, the area from the navigable channel in the Potomac to the bridge site had to be dredged so that the contractor could bring in his floating equipment. Dredging was started on April 24, 1930. Excavation took approximately two months, starting on June 2, and when completed on July 24, 27,000 cubic yards of material had been removed. A quantity of 1,050 cubic yards of stable fill were brought in and spread over the excavated area prior to the actual construction of the bridge.[5]

Between July 31, and August 25, a total of 832 timber foundation piles were driven. The stability of the piles was checked over a period of forty-eight hours by placing a cylindrical water tank weighing thirty-nine tons on one of the piles. Maximum settlement under the load was three-eighths of an

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[1] U.S. Department of Agriculture, Mount Vernon Memorial Highway Bridge over Little Hunting Creek, Drawing Number G-571, Bureau of Public Roads, 1929.

[2] U.S. Department of Agriculture, Mount Vernon Memorial Highway Final Report on Unit III Bridges, Bureau of Public Roads, 1932, 140.

[3] EDAW, Incorporated, Mount Vernon Memorial Highway, Historic Resources Study, Volume 1: History, 77.

[4] Final Report on Unit III Bridges, 141.

[5] ibid, 142.

inch rising to three-sixteenths of an inch after the load was removed.[6] Following this testing, the north and south abutment seals were poured, on September 8 and September 10, respectively. To further assure the stability of the abutments, timber struts sixty feet long and eighteen inches square were ballasted with six inches of concrete and "wedged" between the face walls of the abutments at the level of the seals.[7] Forms were built for the abutment footings and the breast walls, and then the abutments were poured up to the spring line. The south abutment was poured on November 4, with the north abutment following on November 10. The footings for the wing walls and column supports consist of four individual footings which are parallel to the roadway with another footing perpendicular to the four and connecting them at the back.[8]

The centering for the arch was completed on December 10 with the ring stones set in place soon after. The arch barrel was divided into seven sections and poured in stages. The first pour on December 10, consisted of both haunch sections the full length of the barrel. The crown section of the arch barrel was the second part to be poured; this was done on December 18. Two sections, one on the south side and one on the north were the next to be poured, the south on December 30 and the north on December 31.[9] The final pours including closing sections and the remaining cross walls were poured between January 5, 1931, and January 10. Running simultaneously were the pours for the wing walls. The wings were poured in sections; the north section pour starting on November 26, 1930, with completion on December 16, and the south section pour starting on December 6, and completed on January 3, 1931.

As with the construction of the other parkway bridges (see HAER Nos. VA-42A, VA-42B, VA-42C), the masonry and concrete for the wing and spandrel walls were laid and poured alternately. The masonry set for this job was done under freezing conditions, therefore the stone was heated with steam and then laid on hot mortar. Until the mortar set up, the walls were covered with tarpaulins and warmed with steam. The spandrel walls up to the roadway base were completed on January 29. The roadway slab, on the bridge proper, was poured in four sections,[10] with damp-proofing in conjunction, this part of the project being completed on February 3. The final coating of the deck and beams was finished April 4. To further stabilize the structure, the

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[6] ibid, 143.

[7] ibid, 144.

[8] ibid, 145.

[9] ibid, 146.

[10] ibid, 147.

contractor placed 12,605 cubic yards of sand[11] at each end of the bridge, where the sand was allowed to follow its natural slope. Between March 14, and March 24, the roadway slab and beams for the wing walls were poured. Hydraulic fill was placed starting on April 8, with completion on July 11, 1931. As the weight of the fill increased the less stable mud in the creek was displaced, thus making the bridge even more structurally sound.[12] Minor amounts of masonry work remained to be completed. The stone parapets over the arch span were constructed between May 25 and May 29, and over the wings, the parapets were built between June 19 and June 26. Final work on the Little Hunting Creek Bridge was completed on July 18, 1931.

Architect/landscape architect for the bridge was Gilmore D. Clarke. Clarke was a member of New York State's Westchester County Park Commission and was well known for his work on the first "true" parkway, the Bronx River Parkway. Engineers on the job included E.J. Budge, an Associate Highway Bridge Engineer as Resident Engineer. A draftsman, F.M. DeWaters was Assistant Resident Engineer and R.E. Kline was the Inspector.[13] The total cost for the bridge was 274,584.10.[14]

This bridge, along with the other bridges on the parkway, was built to be functional, without being devoid of all character and to be aesthetically pleasing, without being a statement on its own. The bridges blend into the landscape by keeping to the premise mentioned and by the plantings and landscape treatment that surround them. This complete design which includes the landscape and plantings, the alignment of the road and the design of the bridges are factors which establish the Mount Vernon Memorial Highway as a true parkway.

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[11] ibid, 148.

[12] ibid, 149.

[13] ibid, 150.

[14] ibid, 151.

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EDAW, Incorporated. Historic Resources Study Mount Vernon Memorial Highway, Volume 1: History, Appendix E: Specifications for Bridges. Alexandria, VA., June 19, 1987, 90% Submittal. Located at George Washington Memorial Parkway Headquarters at Turkey Run in Virginia.

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